



Bibliometric Study of the Term “Birth Trauma”

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Abstract. Mothers and babies remember the same obstetric events. Babies experience a variety of negative and positive events during birth, “Rarely do babies not experience trauma” Babies have many symptoms that parents and doctors consider normal, but are actually symptoms of birth trauma. Obstetric interventions can be traumatic without relying on other factors to produce a negative effect. The most common obstetric interventions: anesthesia, induction, forceps, and caesarean section have been found to have a traumatic impact even in the absence of previous trauma. Midwifery interventions also have profound effects in other areas of life such as relationships, communication, sexuality, religious/spiritual beliefs, and physical health. Midwives play an important role in facilitating women’s positive experiences of childbirth and childbirth with minimal trauma. Researchers have called for a ‘salutogenic’ health promotion approach to care rather than a pathogenic approach. This study explores the topic of birth trauma research through the Google Scholar database using bibliographic information from the Google Scholar article database between 2013 and 2022 using a total sampling technique. Data was extracted using Publish or Perish, VOS Viewer and Mendeley Desktop.

Keywords: birth trauma · bibliometric · publish or perish · VOSViewer

1 Introduction

Many studies have been conducted to clarify and verify the validity of birth memories. The birth memory research pioneer, Dr. David Chamberlain, found that the obstetric memory of the mother-infant pair was highly accurate. Babies experience a variety of negative and positive events during birth, “Rarely does a baby not traumatized”. Research shows that when people undergo regression therapy by remembering and reliving their birth and prenatal trauma, symptoms disappear spontaneously. Many patients report negative and traumatic memories with obstetric interventions that have a lifelong impact [1, 2].

Research has found that 45% of babies experience birth shock and this trauma requires special care. Another 50% of babies experience lower rates of birth trauma, ranging from mild to severe. Babies have many symptoms that are considered normal by parents and doctors, but are actually symptoms of birth trauma.

Obstetric interventions can be traumatic without relying on other factors to produce a negative effect. The most common obstetric interventions: anesthesia, induction, forceps,

and caesarean section have been found to have a traumatic impact even in the absence of previous trauma. Midwifery interventions also have profound effects in other areas of life such as relationships, communication, sexuality, religious/spiritual beliefs, and physical health [2, 3].

According to Shanley (1994), anesthesia is administered in 80% of all hospital births, and almost nothing has been published about the short- and long-term psychological effects of anesthesia. Anesthesia has a number of psychological effects; e.g. bonding deficiency, shock syndrome, control complex, productivity complex, limit complex, self-disorder, strength complex, and substance abuse [2].

The depth and type of communication occurred spontaneously when there was no unresolved birth trauma, when obstetric drugs were not used, and when there was no shock. Bonding is facilitated by reunion immediately or soon after birth, with little or no time of separation. They exhibit longer and greater examples of qualities that indicate a healthy bond, such as eye contact, concentration on one another, depth of feeling during eye contact, and physical contact [2].

Approximately 20%–40% of all hospital births involve the use of drugs such as Pitocin. Induction and augmentation have a number of effects, including bonding deficiency, shock induction/augmentation, invasion control complex, productivity complex, substance abuse, boundary complex, rescue complex, pain complex, and self-esteem problems [2].

Cesarean delivery is the number one major surgery in the United States, where the cesarean delivery rate has increased from 2% to 3% (in the 1970s), then to 25% in the 1990s (with some hospitals reporting a figure of 50%). Experts in the field (Kohen 1983, 1991) point out that the rate of cesarean section has increased, not because birth complications have increased, but because of electronic fetal monitoring (which results in false and unsubstantiated estimates of fetal distress, leading to unnecessary cesarean deliveries) [2].

Midwives play an important role in facilitating women’s positive experiences during labor and birth that are minimally traumatized. The philosophy of midwifery care is to believe that the female reproductive process is a natural and normal process experienced by every woman [4]. Similarly in obstetrics, researchers have called for a ‘salutogenic’ health promotion approach to care rather than a pathogenic approach [5–7]. For events to be salutogenic, theorists propose they must be understood, managed and for people to find meaning in them [6, 8].

This study explores research topic information about the term birth trauma through the Google Scholar publication database. To the best of our knowledge, a bibliometric analysis of the term birth trauma in obstetrics has never been performed. The purpose of this paper is to provide a broad overview of bibliometric analysis of the literature related to this term to answer the following:

1. How are birth trauma articles classified?
2. What are the trends in birth trauma research in obstetrics?
3. Which research topics are the subject of the most publicity?
4. What topics of future birth trauma provide opportunities for further research?

2 Method

In this study, bibliometric analysis adopted the five-step analysis method introduced by Fahimnia et al. [9] These five steps include defining the search keyword “Psychological birth trauma” initial search results, refinement of search results, compilation of initial data statistics, and data analysis which will be described in detail in the following sub-chapters:

2.1 Defining Search Keywords

The literature search was conducted in August 2022 using the keyword ‘Psychological birth trauma’. Through the Publiih or Perish software using the Google Scholar database to collect data. In the initial step use the keyword query “Psychological birth trauma” to the PoP software, and set the custom conditions for ‘journal’, ‘title word only’, and year ‘2013–2022’. We exclude newspapers, books, book reviews and book chapters. From the “birth trauma” database, 1000 articles were obtained at the beginning of the search period from 2013 to 2022 (almost 9 years).

2.2 Initial Search Results

In the initial search, the year range was not determined so it could be found when the oldest journal was found in 1941 written by IS Wile, R Davis with the title *The relation of birth to behavior* published by bypsycnet.apa.org. [10] the top ten articles are shown in Table 1.

2.3 Search Results Improvements

We excluded articles that did not meet the screening criteria, Table 2 shows References of articles that seemed important to meet the requirements for 9 years.

From 1000 original articles, we pulled 334 papers from leading journals based on scopes preview. After examining the titles and abstracts, 666 articles were excluded for various reasons (Table 2). Table 3 shows the comparison of data metrics from initial searches and refined searches.

2.4 Compile Initial Statistics

Search results after fixes were downloaded, stored in Mendeley software, and exported to RIS format to include all important information related to the paper, including title, author’s name, abstract, keywords and journal specifications (journal of publication, year of publication). Publications, volumes, editions, and pages). The data were analyzed so that articles can be classified by year and publication source and publisher. From queries that use the maximum time range, POP obtains 1000 journal articles from 1941 to 2022. After verification whether various journal publications are Scopus indexed. The number of articles published does not increase from year to year. Figure 1 presents the number and distribution of publications per year.

Table 1. Top Ten Identified

Writer	Title	Publication Year
Z Taghizadeh, A Irajpour, M Arbabi	Mothers’ response to psychological birth trauma: a qualitative study	2013
Z Taghizadeh, A Irajpour, S Nedjat	Iranian mothers’ perception of the psychological birth trauma: a qualitative study	2014
HP Dietz	Ultrasound imaging of maternal birth trauma	2021
M Gordon, H Rich, J Deutschberger, M Green	The immediate and long-term outcome of obstetric birth trauma: I. Brachial plexus paralysis	1973
WR Emerson	Birth Trauma: The Psychological Effects of Obstetrical Interventions	1998
Z Taghizadeh, M Arbabi, A Kazemnejad	Iranian mothers’ perceptions of the impact of the environment on psychological birth trauma: A qualitative study	2015
EM Skinner, HP Dietz	Psychological and somatic sequelae of traumatic vaginal delivery: a literature review	2015
F Bayrı Bingöl, MD Bal, M Dişsiz	Validity and reliability of the Turkish version of the City Birth Trauma Scale (CityBiTS)	2021
C Anderson, M McCarley	Psychological birth trauma in adolescents experiencing an early birth	2013
S Ayers	Birth trauma and post-traumatic stress disorder: the importance of risk and resilience	2017

Regarding publisher groups, Taylor & Francis appeared most frequently, followed by Elsevier, Wiley Online Library, Springer and journals.lww.com (Fig. 2). Taylor & Francis has published and continues to publish in many leading journals, including the American Journal of Clinical Hypnosis, European Journal of Developmental Psychology, European Journal of Psychotraumatology, International Journal of Art Therapy, International Journal of Qualitative Studies on Health and Well-being, Journal of Dual Diagnosis, Journal of Gender Studies, Journal of Infant, Child, and Adolescent Psychotherapy, Journal of Loss and Trauma, Journal of Maternal-Fetal and Neonatal Medicine, Journal of Obstetrics and Gynecology, Journal of Psychology in Africa, Journal of Psychosomatic Obstetrics & Gynecology, journal of Reproductive and Infant Psychology.

Figure 3 shows the journal with the highest number of publications is the Journal of Reproductive and Infant Psychology (32 articles), followed by the Journal of Affective

Table 2. Detailed screening criteria

Filtering criteria	Amount
Irrelevant	644
Not in English	5
Only unknown links/quotes	7
Editorial/book review	3
Nothing from the list	7
Q3/Q4	55
Q1/Q2	279
Total	1000

Disorders (31 articles), the Journal of Perinatology (15 articles) and BMJ Open (13 articles).

Eighty-nine journals to date have only published one article with the theme ‘birth trauma’ in a period of 10 years, including the journals The Permanente Journal, The Journal of sexual medicine, The Journal of Sex Research, The Journal of Perinatal Education, The Journal of Emergency Medicine, The Journal of clinical Psychiatry, The Journal of Behavioral Health Services & Research, The Clinical Journal of Pain, South African Journal of Psychology, Shiraz E-Medical Journal, Scandinavian Journal of Public Health, Scandinavian Journal of Psychology, Scandinavian Journal of Caring Sciences, postgraduate Medical Journal, Mediterranean Journal of Clinical Psychology MJCP, Malawi medical journal, Jung Journal, JoVE (Journal of Visualized Experiments), journal reproductive and Infant Psychology, journal Pediatric Psychology, Journal of Traumatic Stress, Journal of Trauma & Dissociation, Journal of the Turkish German Gynecological Association, Journal of the History of Medicine and Allied Sciences, Journal of the Association of Nurses in AIDS Care, Journal of the American Psychoanalytic Association, Journal of Social Work, Journal of Social and Clinical Psychology, Journal of Sex & Marital Therapy, Journal of Research in Nursing, Journal of Research in Nursing, Journal of Research in Nursing.

The total number of Scopus Q1 and Q2 indexed journals is 279 journals covering issues related to birth trauma.

2.5 Data Analysis

This article presents a bibliometric analysis of the term ‘birth trauma’ from the Google Scholar database. The bibliometric review in this paper used PoP software developed and launched in 2006 by Professor Anne Wil Harzing of Tarma Research Software Pty Ltd-Melbourne. [11] For analysis, we used version 5.28.1.6296. Research using this software was conducted on 27 August 2022, obtaining 1000 papers in the initial results with 52992 citations (33 citations/year). Improvements to the search for fixes yielded 334 articles. The data on citations also changed, namely 15837 citations (70.11%) and 24 citations/year (72.7%). This finding shows that the Q1 and Q2 journals do not have an

Table 3. Comparison matrix

Metric data	Preliminary data	Repair search
<i>Query</i>	<i>journal, birth trauma to 2020</i>	<i>journal, birth trauma from 2013 to 2022</i>
<i>Source</i>	<i>GoogleScholar</i>	<i>GoogleScholar</i>
Papers	1000	334
Citation	52992	15837
Years	33	9
Cites_Year	5888	1759.67
Cites_Paper	52.99	47.42
Cites_Author	18511.34	5193.71
Papers_Author	398.4	129.12
Authors_Paper	3.25	3.3
h_index	112	67
g_index	183	110
hc_index	97	62
hI_index	30.15	17.6
hI_norm	58	35
AWCR	11128.18	3352.25
AW_index	105.49	57.9
AWCRPA	3988.78	1088.5
e_index	120.58	72.71
hm_index	67.78	38.72
QueryDate	8/15/2022	9/27/2022
Cites AuthorYear	2056.81	577.07
hI_annual	6.44	3.89
h_coverage	51.1	61.7
g_coverage	63.3	76.5
star_count	318	103
year_first	2013	2013
year_last	2022	2022
ECC	52992	15837
acc1	932	318
acc2	836	286
acc5	601	206
acc20	145	47
Ha	42	26

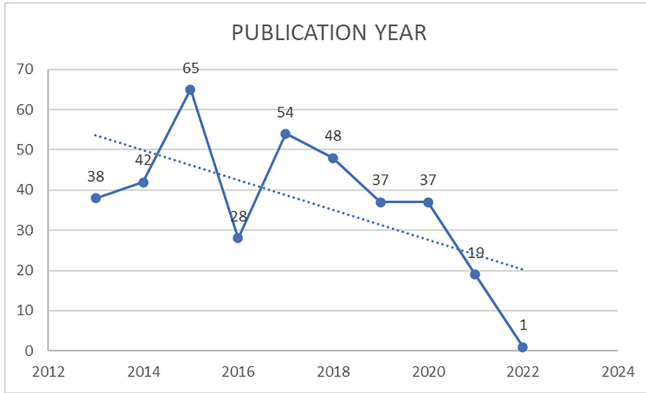


Fig. 1. Publication trends

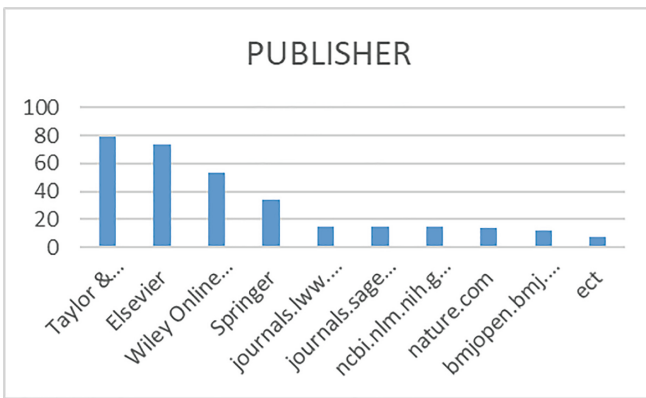


Fig. 2. Publisher of articles cited

increasing impact on the number of citations compared to other journals. This is possible because the 'birth trauma' query will also include articles with the keywords 'birth' and 'trauma'. Conclusions supported by changes to the h-index. The complete results of comparison metrics before and after search refinement are summarized in Table 3.

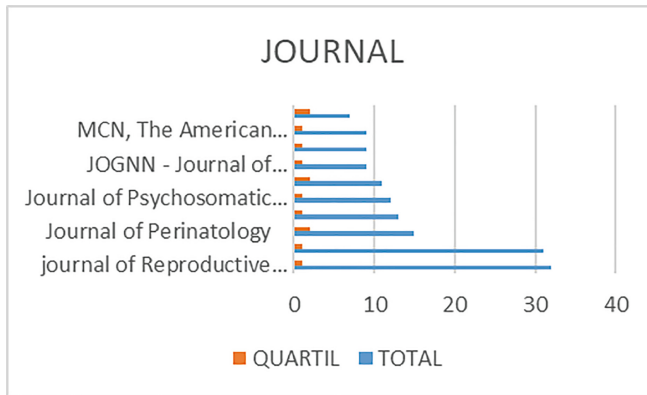


Fig. 3. The journal where the article in the analysis appears

3 Results and Discussion

Studies show that Q1/Q2 journals seem to have less of a major impact on metrics associated with citations. Most cited were articles and authors. Articles written by PD Yildiz, S Ayers, L Phillips have been cited by 383 authors, becoming the most cited articles in this field. This article, entitled *The prevalence of posttraumatic stress disorder in pregnancy and after birth: A systematic review and meta-analysis*, was written in 2017 and published in ‘Elsevier: Journal of affective disorders’. The second most cited article is the paper by JL Alhusen, E Ray, P Sharps, L Bullock (2015) entitled *Intimate partner violence during pregnancy: maternal and neonatal outcomes* which was published in the *Journal of Women’s Health* and was subsequently cited by 320 authors.

After taking into account the citation frequency and other metrics, it then analyzed the output from the PoP software into the VOSviewer software to determine what keywords appear frequently. The keyword frequency can be set by 1, 5, 10, 20, or any other occurrence. The VOSviewer tool was developed by van Eck and Waltman in 2010 (see in <http://www.vosviewer.com/>) and used to visualize bibliometric maps. This software demonstrates bibliometric mapping.

In three different visualizations, network visualization (Fig. 4), overlay visualization, and depth visualization (Fig. 5). VOSviewer can classify keywords into different groups. The bullet indicates the weight of the incident. This explanation answers the first research question.

Extracting from the title and abstract fields, the full count with the minimum number of occurrences set to 10, we get 1969 terms and 49 items meet the threshold. Common words (1) were excluded (ie, review, case, impact, post). Four clusters are identified here. The first cluster (shown on the left), consists of 7 items, with the most frequent terms being ‘women’ (91 occurrences), ‘birth experience’ (36), and ‘prevalence’ (16), ‘psychological birth trauma’ (15), ‘psychological impact’ (12), ‘Midwife’ (11). The second cluster has 7 items including ‘stress’ (52 occurrences), ‘mother’ (51 occurrences), ‘psychological stress’ (44 occurrences), ‘child’ (29), and ‘infant’ (36), and ‘parent’ (25), and ‘preterm birth’ (24). The third cluster identified six other words that occurred most frequently, with

the most common being ‘history’ (25), followed by ‘resilience’ (22), ‘trauma exposure’ (15), ‘childhood trauma’ (18), ‘mental health’ (18) and ‘developmental’ (17). The fourth cluster identified five other words that occurred most frequently, with the most common being ‘childbirth’ (77), followed by ‘pot traumatic stress disorder’ (24), ‘fear’ (20), ‘anxiety’ (17) and ‘pregnant women’ (13).

The keywords in each cluster represent the flow of research on birth trauma. Each cluster shows a trend in studies related to ‘birth trauma’ which can be represented by the occurrence of certain terms. These data allow this paper to answer the second central question, what are the trends in birth trauma research. ‘birth experience’, ‘stress’, ‘history’ and ‘childbirth’ are the most common words; while ‘midwife’, ‘preterm birth’, ‘resilience’, and ‘pregnant women’ are some of the underused words and could be used as references in future studies. Various research topics can be developed based on these keywords.

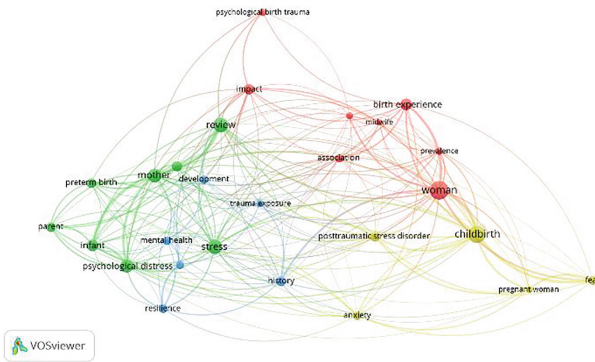


Fig. 4. Network visualization mapping

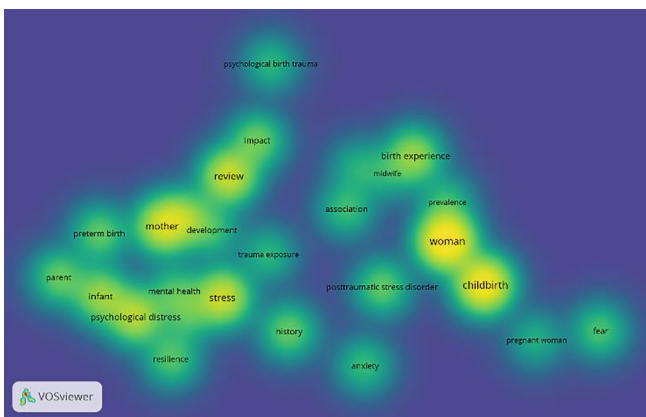


Fig. 5. Depth visualization mapping

4 Conclusion

This study reviewed 334 articles on themes related to birth trauma. Articles were collected from the Google Scholar database using PoP software. These 334 articles are taken from a larger full text consisting of 1000 articles. In the context of this study, it can be concluded that Q1/Q2 did not have an increasing impact on the ‘birth trauma’ area of the comparison of baseline and refined outcomes. The improvements resulted in a 70.11% decrease in the number of citations with the h-index decreasing from 42 to 26.

The gaps in this study indicate the direction of future research on ‘birth trauma’. Overall, studying the concept of ‘birth trauma’ is on a downward trend, special attention is needed for more inter-regional research collaborations involving researchers from Asia and other developing countries on the topic of birth trauma.

This study has several limitations. First, this study was based on a limited set of keywords and also potentially limited by the limited database (Google Scholar) used for the collection of articles. Second, although this study used formal tools (PoP software, VOSviewer, Mendeley, Microsoft Excel), the author’s judgment is subjective and can still lead to errors.

Suggestions for further research can use a larger sample size by expanding the keywords used and the databases accessed. In addition, it is recommended to compare the analysis results using different bibliometric analysis software (such as BibExcel and HistCite).

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